

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/011480

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ C12N15/00, C07K14/195, C12N9/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C12N15/00, C07K14/195, C12N9/16

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Genbank/EMBL/DDBJ/GeneSeq, SwissProt/PIR/Geneseq,
CAPLUS/MEDLINE/BIOSIS/WPIDS (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
<u>X</u> <u>Y</u> <u>A</u>	Provost, P. et al., "Ribonuclease activity and RNA binding of recombinant human Dicer", EMBO J., (2002), Vol.21, No.21, pages 5864 to 5874; full text	<u>1-8,10-13,</u> <u>17-19,26,27</u> <u>9</u> 14-16
<u>X</u> <u>Y</u> <u>A</u>	WO 01/68839 A2 (Cold Spring Harbor Laboratory), 21 September, 2001 (21.09.01), Sequence No. 2; Claim 6 & CA 2403397 A & AU 4579301 A & US 2002/0162126 A1 & EP 1272630 A & WO 03/062394 A2 & JP 2003-526367 A	<u>1-8,10-13,</u> <u>17-19,26,27</u> <u>9</u> 14-16,20-25, 28,29

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
21 October, 2004 (21.10.04)Date of mailing of the international search report
09 November, 2004 (09.11.04)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 99/27117 A1 (Takara Shuzo Co., Ltd.), 03 June, 1999 (03.06.99), Full text & CA 2309600 A & AU 1054699 A & EP 1033408 A1 & US 6479260 B1 & US 2003/0082799 A1	9
<u>X</u>	Bae, W. et al., "Escherichia coli CspA- family RNA chaperones are transcription antiterminators", Proc.Natl.Acad.Sci.USA, <u>Y</u> A (2000), Vol.97, No.14, pages 7784 to 7789; Abstract	<u>20-23,25,28,</u> <u>29</u> <u>24</u> 1-19,26,27
Y	Kremer, W. et al., "Solution NMR structure of the cold-shock protein from the hyperthermophilic bacterium Thermatoga maritima", Eur.J.Biochem., (2001), Vol.268, pages 2527 to 2539; full text	1-29
A	Melekhovets, Y.F. et al., "Fusion with an RNA binding domain to confer target RNA specificity to an RNase: design and engineering of Tat-RNase H that specifically recognizes and cleaves HIV-1 RNA in vitro", Nucl.Acids Res., (1996), Vol.24, No.10, pages 1908 to 1912; abstract	1-13,17-19, 26,27

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
(See extra sheet.)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet (2)

Claims 1 to 19, 26 and 27 relate to a specific protein having an activity of degrading a dsRNA, a method of producing the same, a composition containing the same, a method of degrading a dsRNA using the same and so on. In several claims among them, coexistence of a protein having an activity of binding to a nucleic acid and fusion thereof with the protein having an activity of degrading a dsRNA are described.

Claims 20 to 25, 28 and 29 relate to a method of synthesizing an RNA characterized by using a combination of a protein having an activity of synthesizing an RNA with a protein having an activity of binding to a nucleic acid and so on.

A large number of nucleic acid-binding proteins including *Thermotoga maritima*-origin cold shock protein have been known by those skilled in the art (see, if needed, Eur.J.Biochem., (2001), Vol.268, pp.2527-2539; Proc.Natl.Acad.Sci.USA (2000), Vol.97, pp.7784-7789). Thus, it cannot be considered as a special technical feature common to the above 2 groups of inventions.

Such being the case, these 2 general inventive concepts as described above have no novel special technical feature in common and it is therefore recognized that this international application does not comply with the requirement of unity of invention (under the provisions of Article 13 (PCT Rules 13.1, 13.2 and 13.3)).